

REMARKS/ARGUMENTS

Referring to the amended claims filed 11 June 2008, claims 1 to 21 have been cancelled. Original claim 18 is now new claim 22. Claims 23 to 38 are based on original claims 2 to 17 with amendment to depend from the “method” claim 22. Original claims 19 and 20 are now new claims 39 and 40. Original claim 21 has been deleted.

Referring to the published US application, claim 18 (new claim 22) has been amended to refer to a narrow groove formed using a cutting tool as disclosed in paragraph [0072], line 2 and elsewhere. The step of “*removing*” the damaged tissue is supported at paragraph [0017], line 4, paragraph [0030], last line and elsewhere. The term “*cavity*” is supported at paragraph [0074] and elsewhere referring to recess 23.

Reference to “*said connecting portions spaced apart... to allow tissue in-growth*” is supported at paragraph [0022], lines 6 to 7; paragraph [0066], lines 11 to 13 and elsewhere.

Claim Rejections – 35 USC § 103

The Office Action rejected claims 18, 19, and 20 under Section 103(a) as being “anticipated” by Seedhom et al. (U.S. Publication No. 2003/0135209) in view of Bonutti (U.S. 6,117,160) further in view of Schwartz et al. (U.S. 7,163,563). All other claim rejections set forth in the Office Act are moot in view of the foregoing amendments.

Seedhom et al. (U.S. Publication No. 2003/0135209) is discussed in the published specification at paragraphs [0038] and [0043]. The Office Action acknowledges that Seedhom discloses some of the steps recited in claim 22, but Seedhom does “not disclose the connecting element being spaced apart from the pad in anchored position by a length of said connecting portions with the groove.” Importantly, Seedhom does not disclose a “retaining element” as disclosed in the specification and recited in claim 22, specifically a retaining element “spaced apart from said bio-compatible replacement pad in anchored position by a length of said connecting portions located in said groove.” The “netting 39” disclosed by Seedhom is not a retaining element as disclosed and claimed in the pending application. Claim 22 recites the step of “anchoring the bio-compatible replacement pad in said cavity by *sliding said retaining element depthwise into the groove* to a depth into the bone underlying said cavity to apply a downward pulling force to said connecting portions to locate and anchor said pad in said cavity.”

Thus, claim 22 clearly specifies that the “retaining element” is a distinctly different structure than the “connecting portions.” The “retaining element” is pressed within the groove to anchor the bio-compatible replacement pad via the connecting portions.

The specification discloses in paragraph [0069]:

The retaining element may be pre-attached to the ends of the loops of the connecting portions 14, so that downward movement of the retaining element into the groove pulls the loops downwardly until the pad 11 is received by and then anchored in or at the bone site.

Paragraph [0071] discloses:

The retaining element is slidable depthwise of the groove, and may be pre-formed to have a shape corresponding generally with at least part of the shape of the groove, as seen in plan. Alternatively, the retaining element may be deformable to take up the required shape, prior to introduction into the groove.

From the foregoing, Applicants respectfully submit that Seedhom does not disclose a retaining element as disclosed and claimed herein. Applicants further submit that the secondary references Bonutti and Schwartz '563 likewise fail to disclose a retaining element as recited and claimed.

Bonutti (US 6,117,160) is not related to the anchoring of a bio-compatible replacement pad at a bone repair site. The Bonutti patent does not disclose or suggest any of the recited method steps such as forming a narrow groove, removing the damaged tissue within the region defined by the groove, inserting a bio-compatible replacement pad, retaining the bio-compatible replacement pad in the cavity, and anchoring the bio-compatible replacement pad by sliding the retaining element depthwise into the groove. In contrast, Bonutti relates to method and apparatus for securing sections of fractured bone and/or body tissue. Bonutti fails to disclose a retaining element as disclosed and claimed herein, and specifically the claimed step of “anchoring the bio-compatible replacement pad in said cavity by *sliding said retaining element depthwise into the groove* to a depth into the bone underlying said cavity to apply a downward pulling force to said connecting portions to locate and anchor said pad in said cavity.”

Schwartz (US 7,163,563) is cited in the Office Action for the purpose of disclosing "tissue repair material with an array of connecting elements 15, 17 fixed at the perimeter of the pad (fig. 28)." Schwartz may disclose a tissue repair material 20 with fixating members 15, 17, but Schwartz fails to disclose a retaining element as disclosed and claimed herein, and specifically the claimed step of "anchoring the bio-compatible replacement pad in said cavity by *sliding said retaining element depthwise into the groove* to a depth into the bone underlying said cavity to apply a downward pulling force to said connecting portions to locate and anchor said pad in said cavity."

Obviousness under Section 103(a)

As discussed above, the combined prior art references fail to disclose or suggest each and every claim limitation set forth in the rejected independent claim 18 (now claim 22). Therefore, Applicants respectfully submit that claim 22 and its dependent claims would not have been obvious from the combined teachings of Seedhom, Bonutti, and Schwartz.

The present invention provides a method of minimal invasive surgery to achieve a strong and reliable tissue repair at a bone site. This is principally achieved by forming a narrow groove. Additionally, the surgeon can optimize the resultant strength of the repair site by selectively adjusting the dimensions of the groove, the retaining element and connected portions. That is, around the damaged tissue and then anchoring a replacement pad using suitable anchoring means that cooperates with the surfaces within this narrow groove.

As detailed in the published specification, paragraph [0043], a significant advantage with the present invention is achieved via the use of connecting portions that provide a connection between the replacement pad and the retaining element anchor. These connecting portions can be configured so as to not occupy much space in the groove and thereby facilitate bone healing and in turn increase the post surgical recovery rate.

Minimum surgical invasion is achieved by using a retaining element and connecting portions that allow formation of a narrow groove. Conventional and known techniques require formation of a thicker groove so as to accommodate conventional anchoring sheets as disclosed in Seedhom (U.S. Publication No. 2003/0135209; WO 01/39694). It is important

to stress that in general, surgical procedures are developed to minimize invasion to speed recovery and reduce the risk of infection.

Also referring to paragraph [0043], using a retaining element and connecting portions advantageously allow the edges of the pad to be positioned in contact with the tissue surrounding the as formed cavity. This expedites integration of the replacement material with the native tissue to increase the speed of patient recovery.

These features can be manipulated by the surgeon to maximize the frictional contact between the retaining element and the walls of the groove. The number of connecting portions may also be adjusted to further increase the strength of the repair.

The use of a replacement pad, connecting portions and retaining element provide a reliably strong repair, a simplified procedure and a reduction in the procedure time. Regarding this latter point, the repair elements may be preassembled on a delivering device according to the specification as filed [0031] to [0036].

None of the prior art documents cited by the Examiner teach towards or suggest means or method to achieve the above advantages.

As indicated above, Bonutti is principally directed to securing fractured bone components together and does in no way prompt the skilled person towards the subject invention.

The Schwartz '563 patent does not disclose a procedure involving the formation of a narrow groove around the cavity from which the damaged tissue has been removed. The skilled person would be exercising significant inventive effort to modify the procedures of Schwartz to achieve the subject invention.

Schwartz '563 does disclose dart like retaining elements 16, 16A, referring to figure 8. However, Schwartz directs the skilled person away from the subject invention as these retaining elements are simply pushed so as to embed in the meniscus tissue. The skilled person is directed away from specifically creating a preformed narrow groove into which a specifically designed retaining element is slid depthwise so as to exert a downward pulling force on the connecting portions. The barbed darts 16, 16A of Schwartz would not be suitable for use with the subject invention and again, the skilled person would be exercising

inventive effort so as to modify the apparatus and method of Schwartz '563 to arrive at the subject invention.

Bonutti also directs the skilled person away from the subject invention by disclosing the button like anchors 50, 52 that are positioned external to the bore-hole/passage 40. These anchors 50, 52 are not configured to be slid depthwise into the passage 40 to be locked in position by the frictional contact with the internal walls of the passage. This would be in complete contrast to the intended purpose of the anchoring buttons 50, 52 as clearly the procedure of Bonutti would fail if anchoring buttons 50, 52 of were to be slid or jammed within passage 40.

Features of the present invention not disclosed in Seedhom are similarly not found in Schwartz '563 and Bonutti. These secondary references provide no motivation for the skilled person to modify the respective devices and procedures to arrive at the subject invention.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If there are any remaining issues preventing allowance of the pending claims that may be clarified by telephone, the Examiner is requested to call the undersigned.

Respectfully submitted,

/Evan R. Witt/

Evan R. Witt
Reg. No. 32,512
Attorney for Applicant(s)

Date: October 24, 2008
KIRTON & McCONKIE
1800 Eagle Gate Tower
60 East South Temple
Salt Lake City, Utah 84111
Telephone: 801/328-3600

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